

CLAIMS

What is claimed is:

1. A method for a user equipment (UE) to establish a communication link comprising the steps of:

receiving an input communication signal at an initial search frequency;

processing said input communication signal to retrieve a primary scrambling code, said retrieval of said primary scrambling code being a code decision; and

adjusting the search frequency of said UE in response to said code decision.

2. The method of claim 1 wherein said processing step includes:

first processing said communication signal and generating an index value associated with a primary synchronization code within said communication signal;

extracting a peak sample from said communication signal in response to said index value;

second processing said communication signal in response to said index value and said peak sample and retrieving a code group number, slot offset, and secondary synchronization code; and

third processing said communication signal and retrieving the primary scrambling code in response to said code group number and said slot offset.

3. The method of claim 2 wherein said adjustment of said search frequency comprises the steps of:

extracting one of a plurality of offset frequencies and one of a plurality of search frequencies;

combining said one of said plurality of offset frequencies with said one of said plurality of base frequencies for generating said search frequency;
maintaining said search frequency; and
setting said offset frequency in response to said code decision.

4. The method of claim 2 wherein said plurality of offset frequencies and said plurality of base frequencies are stored in a frequency step table and a frequency allocation table, respectively.

5. The method of claim 4 wherein said UE steps through said frequency step table for each of said base frequencies in said frequency allocation table until said code decision is firm;

said firm code decision being when a retrieved primary scrambling code is greater than a threshold value or said third processing step retrieves the same primary scrambling code a predetermined number of times.

6. The method of claim 2 further comprising the steps of:

storing said index value and said primary scrambling code in an index buffer and code buffer, respectively;

comparing said primary scrambling code with a primary scrambling code stored in said code with a primary scrambling code stored in said code buffer and said index with an index stored in said index buffer;

rejecting said primary scrambling code and said index when said primary scrambling code if said primary scrambling found in said code buffer; and

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reprocessing said communication signal excluding a predetermined window around any index in said index buffer.

7. The method of claim 6 further comprising the step of adjusting said search frequency of said UE when no primary scrambling code is retrieved.